



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|----------------------|---------------------|------------------|
| 10/668,374 | 09/24/2003 | Byoung-han Kim | 1293.1850 | 4793 |
| 21171 | 7590 | 05/29/2007 | EXAMINER | |
| STAAS & HALSEY LLP SUITE 700 1201 NEW YORK AVENUE, N.W. WASHINGTON, DC 20005 | | | DHARIA, PRABODH M | |
| | | ART UNIT | PAPER NUMBER | |
| | | 2629 | | |
| | | MAIL DATE | DELIVERY MODE | |
| | | 05/29/2007 | PAPER | |

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/668,374 | KIM, BYOUNG-HAN | |
| | Examiner | Art Unit | |
| | Prabodh M. Dharia | 2629 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) Responsive to communication(s) filed on 13 April 2007.
- 2a) This action is **FINAL**. 2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) Claim(s) 1-27 is/are pending in the application.
 - 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) Claim(s) _____ is/are allowed.
- 6) Claim(s) 1-3,8-11,16-19 and 25-27 is/are rejected.
- 7) Claim(s) 4-7,12-15 and 20-24 is/are objected to.
- 8) Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 24 September 2003 is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) All b) Some * c) None of:
 1. Certified copies of the priority documents have been received.
 2. Certified copies of the priority documents have been received in Application No. _____.
 3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2629

1. **Status:** Please all the replies and correspondence should be addressed to examiner's new art unit 2629. Receipt is acknowledged of papers submitted on 04-13-2007 under request for reconsideration, which have been placed of record in the file. Claims 1-27 are pending in this action.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-3, 8-11, 16-19 and 25-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tokui (5,987,532) in view of Casady et al. (4,759,009) and (Matsuzaki et al. (US 2002/0067318 A1).

Regarding Claims 1, Tokui teaches a chained image display apparatus (U1-U4, figure 1-5, Col. 2, lines 52-67, Col. 3, Lines 33-36) comprising a plurality of image display apparatuses connected in series (figure 1, Col. 2, Lines 52-56, Col. 3, Lines 33-36) and controlled by a central control unit (#5 Figure 1, Col. 2, Lines 54-60), the chained image display apparatus (U1-U4, figure 1, Col. 2, Lines 52-56) comprising: a control signal driving unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level (Col. 2, Lines 59-64) and buffering the control signal having the predetermined level (Col. 2, Lines 64-67, Col. 4, Lines 57-61).

However, Tokui fails to teach an examining unit transmitting an alert signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted, to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted, indicating that the power supply to the one image display apparatus is interrupted; the alert signal transmitted from examining unit transmit the alert signal to central unit; the connection unit connects a driving voltage output from the previous image display apparatus to the one image display apparatus having the interrupted power supply and transmits an image signal, which is buffered by the one image display apparatus having the interrupted power supply, to the next image display apparatus; transmitting the alert signal to the central control unit from the next and previous image display apparatuses; sending the alert signal to the examining unit from the control unit.

However, Casady et al. teaches an examining unit (Col. 5, Lines 45-47, Lines 54-60) transmitting (Col. 3, Lines 43-50) an alert signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted (Col. 5, Lines 10-17), to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted (Col. 5, Lines 17-58), indicating that the power supply to the one image display apparatus is interrupted (Col. 9, Lines 21-27, Lines 38-67); the alert signal transmitted from examining unit transmit the alert signal to central unit (Col. 3, Lines 6-10, Lines 44-46); the connection unit connects a driving voltage output from the previous image display apparatus to the one image display apparatus having the interrupted power supply (Col. 4, Lines 40-43) and transmits an image signal, which is buffered

(see figure 1, repeaters 22) by the one image display apparatus having the interrupted power supply, to the next image display apparatus (Col. 4, Lines 43-51); transmitting the alert signal to the central control unit from the next and previous image display apparatuses (Col. 5, Lines 10-58); sending the alert signal to the examining unit from the control unit (Col. 5, Lines 47,48, whole communication is achieved in loop configuration).

The reason to combine Casady et al. with Tokui to have a multiple display system connected in loop configuration communicating serially with time division multiplexing and be able to recognize alarming condition in one of the unit, alerting central unit; removing the disable unit temporarily; without disrupting communication; continue displaying information provided by central unit on rest of the working display units.

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Casady et al. in the teaching of Tokui to be able to have multi-panel display system capable of recognizing service threatening condition such as power interruption and prevent loss of data to rest of the system by bypassing the disabled display temporarily until the power is restored to disabled display.

Tokui fails to teach an examining unit transmitting an alert signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted, to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted, indicating that the power supply to the one image display apparatus is interrupted.

However, Matsuzaki et al. teaches an examining unit (see figure 53 A-C, also figures 47-49, page 17,18, paragraph 377, 390,391, pages 19,20 paragraph 420, 431) transmitting a signal,

in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted (page 26, Claim language 23, since the next master unit need to be determined it is an alert to all slave displays), to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted (page 24, paragraph 492), indicating that the power supply to the one image display apparatus is interrupted (page 23, paragraphs 469-479, 482, 492,493); the alert signal transmitted from examining unit transmit the alert signal to central unit (page 26, Claim language 23, since the next master unit need to be determined it is an alert to all slave displays); the connection unit connects a driving voltage output from the previous image display apparatus to the one image display apparatus having the interrupted power supply (page 23, paragraphs 469-479, 482, 492,493) and transmits an image signal, which is buffered by the one image display apparatus (page 26, claim language 14, having the interrupted power supply, to the next image display apparatus (page 23, paragraphs 469-479, 482, 492,493) ; transmitting the alert signal to the central control unit from the next and previous image display apparatuses (page 23, paragraphs 469-479, 482, 492,493, page 26, claim language 23, since the next master unit need to be determined it is an alert to all slave displays); sending the signal to the examining unit from the control unit (page 23, paragraphs 469-479, 482, 492,493).

The reason to combine Matsuzaki et al. with Tokui to have a multiple display system connected in loop configuration communicating serially with time division multiplexing and be able to recognize alarming condition in one of the unit, alerting central unit; removing the disable unit temporarily; without disrupting communication; continue displaying information provided by central unit on rest of the working display units.

Thus it would have been obvious to one in the ordinary skill in the art at the time of invention was made to incorporate the teaching of Casady et al. in the teaching of Tokui to be able to have multi-panel display system capable of recognizing service threatening condition such as power interruption and prevent loss of data to rest of the system by bypassing the disabled display temporarily using relays (see figure 46-49) until the power is restored to disabled display without disturbing user's use due to interruption of the image data transfer and alert signal allows to continue operation by selecting new master for master/slave operation.

Regarding Claim 2, Tokui teaches each of the plurality of image display apparatuses further comprises: a portion receiving the control signal from the central control unit; and a buffer transmitting the received control signal to the next image display apparatus (figure 1-4, Col. 2, Lines 52-67, Col. 3, Lines 1-7, 33-36, Col. 4, Lines 57-61).

Further Regarding Claim 3, Casady et al. teaches the next and previous image display apparatuses, receiving the alert signal output from the examining unit, transmit the alert signal to the central control unit (Col. 5, Lines 17-58).

Further Regarding Claim 8, Matsuzaki et al. teaches the connection unit connects a driving voltage output from the previous image display apparatus to the one image display apparatus (page 23, paragraphs 469-479, 482, 492, 493) having the interrupted power supply and transmits an image signal, which is buffered by the one image display apparatus having the

interrupted power supply, to the next image display apparatus (page 23, paragraphs 469-479, 482, 492,493).

Regarding Claim 9, Tokui teaches the driving voltage output from the previous image display apparatus is provided to the next image display apparatus (Col. 3, Line 22 to Col. 4, Line 28, Col. 4, Lines 57-61).

Further Regarding Claim 10, Tokui teaches a chained image display apparatus (U1-U4, figure 1-5, Col. 2, lines 52-67, Col. 3, Lines 33-36) comprising a plurality of image display apparatuses connected in series (figure 1, Col. 2, Lines 52-56, Col. 3, Lines 33-36) and controlled by a central control unit (#5 Figure 1, Col. 2, Lines 54-60), the chained image display apparatus (U1-U4, figure 1, Col. 2, Lines 52-56) comprising: a control signal driving unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level (Col. 2, Lines 59-64) and buffering the control signal having the predetermined level (Col. 2, Lines 64-67, Col. 4, Lines 57-61). Further regarding Claim 10 Matsuzaki et al. teaches transmitting a signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted (page 26, Claim language 23, since the next master unit need to be determined it is an alert to all slave displays), to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted (page 24, paragraph 492), indicating that the power supply to the one image display apparatus is interrupted (page 23, paragraphs 469-479, 482, 492,493).

Further Regarding Claim 11, Matsuzaki et al. teaches transmitting the alert signal to the central control unit from the next and previous image display apparatuses (page 23, paragraphs 469-479, 482, 492,493, page 26, claim language 23, since the next master unit need to be determined it is an alert to all slave displays).

Further Regarding Claim 16, Matsuzaki et al. teaches a driving voltage output from the previous image display apparatus to the one image display apparatus having the interrupted power supply, and transmitting an image signal, which is buffered by the one image display apparatus having the interrupted power supply, to the next image display apparatus.

Regarding Claim 17, Tokui teaches the driving voltage output from the previous image display apparatus is provided to the next image display apparatus (Col. 3, Line 22 to Col. 4, Line 28, Col. 4, Lines 57-61).

Regarding Claim 18, Tokui teaches a system comprising a plurality of image display apparatuses (U1-U4, figure 1-5, Col. 2, lines 52-67, Col. 3, Lines 33-36) connected in series (figure 1, Col. 2, Lines 52-56, Col. 3, Lines 33-36) and controlled by a central control unit (#5 Figure 1, Col. 2, Lines 54-60), the chained image display apparatus (U1-U4, figure 1, Col. 2, Lines 52-56) comprising: a control signal driving unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level (Col. 2, Lines 59-64) and buffering the control signal having the predetermined level (Col. 2, Lines 64-67, Col. 4, Lines 57-61). Further Regarding Claim 18, Casady et al. teaches an examining unit (Col. 5, Lines

45-47, Lines 54-60) transmitting (Col. 3, Lines 43-50) an alert signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted (Col. 5, Lines 10-17), to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted (Col. 5, Lines 17-58), indicating that the power supply to the one image display apparatus is interrupted (Col. 9, Lines 21-27, Lines 38-67).

Regarding Claim 19, Tokui teaches each of the plurality of image display apparatuses further comprises: a portion receiving the control signal from the central control unit; and a buffer transmitting the received control signal to the next image display apparatus (Col. 3, Line 22 to Col. 4, Line 28, Col. 4, Lines 57-61).

Further Regarding Claim 25, Casady et al. teaches the connection unit connects a driving voltage output from the previous image display apparatus to the one image display apparatus having the interrupted power supply (Col. 4, Lines 40-43) and transmits an image signal, which is buffered (see figure 1, repeaters 22) by the one image display apparatus having the interrupted power supply, to the next image display apparatus (Col. 4, Lines 43-51).

Regarding Claim 26, Tokui teaches the driving voltage output from the previous image display apparatus is provided to the next image display apparatus (Col. 3, Line 22 to Col. 4, Line 28, Col. 4, Lines 57-61).

Regarding Claim 27, Tokui teaches a machine readable storage medium storing a program (Col. 2, Line 52-55 machine readable storage medium storing a program are inheritant to computer) for performing a control signal driving unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level (Col. 2, Lines 59-64) and buffering the control signal having the predetermined level (Col. 2, Lines 64-67, Col. 4, Lines 57-61) and Further Regarding Claim 18, Casady et al. teaches an examining unit (Col. 5, Lines 45-47, Lines 54-60) transmitting (Col. 3, Lines 43-50) an alert signal, in response to a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted (Col. 5, Lines 10-17), to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted (Col. 5, Lines 17-58), indicating that the power supply to the one image display apparatus is interrupted (Col. 9, Lines 21-27, Lines 38-67).

Response to Arguments

4. Applicant's arguments, see remark, filed 04-13-2007, with respect to the rejection(s) of claim(s) 1-27 under non-final rejection mailed on 01-25-2007 have been fully considered and are not persuasive. The displays are connected in serial connection receiving data sequentially concept is well known in the art. The financial industry used the (IBM) loop configuration communicating to concentrators to reduce disruption during financial transaction performed interactively.

5. In response to applicant's argument that Tokui (5,987,532) in view of Casady et al. (4,759,009) and (Matsuzaki et al. (US 2002/0067318 A1) are not comparable as alarm system of Tokui (5,987,532) in view of Casady et al. (4,759,009) and Matsuzaki et al. (US 2002/0067318 A1) display system cannot be bodily incorporated, the test for obviousness is not whether the features of a secondary reference may be bodily incorporated into the structure of the primary reference; nor is it that the claimed invention must be expressly suggested in any one or all of the references. Rather, the test is what the combined teachings of the references would have suggested to those of ordinary skill in the art. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981).

6. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, Tokui teaches a basic display system chained together connected in series. Cassidy et al. teaches a digital communication system having a central terminal and four serially coupled remote terminals. Each remote terminal has a by-pass switch for automatically bypassing that remote terminal should a service threatening condition (power interruption or disruption or power off) exist therein, thereby maintaining service to all remaining remote terminals and major and minor alarm information (indicating service requiring conditions) is transmitted by each

Art Unit: 2629

remote terminal during signaling frames in a communication. Matsuzaki et al. discloses specific image display system with a control signal driver unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level and buffering the control signal having the predetermined level. Each prior art teaches independent methods of claimed inventions limitation, which could be incorporated and combined to teach claimed invention limitations. Therefore the combination teaches applicant's claimed invention and do obviate.

Applicant argues combination makes system very complicated.

Examiner disagrees and argues back as none of the independent claims recites objected claims allowable limitations.

Allowable Subject Matter

7. Claims 4-7, 12-15 and 20-24 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is an examiner's statement of reasons for allowance:

A chained image display apparatus comprising a plurality of image display apparatuses connected in series and controlled by a central control unit, the chained image display apparatus comprising: a control signal driving unit converting a control signal inputted to the image display apparatuses into a control signal having a predetermined level and buffering the control signal having the predetermined level; and an examining unit transmitting an alert signal, in response to

a power supply to one image display apparatus among the plurality of image display apparatuses being interrupted, to next and previous image display apparatuses which are connected to the one image display apparatus to which the power supply was interrupted, indicating that the power supply to the one image display apparatus is interrupted and a connection unit receiving a voltage from the previous image display apparatus and supplying a supply voltage to the one image display apparatus to which the power supply was interrupted; and a switching unit routing the alert signal to the next and previous image display apparatuses in response to the power supply being interrupted; wherein the switching unit comprises a first switching unit routing the alert signal to the previous image display apparatus, and a second switching unit routing the alert signal to the next image display apparatus and a control unit, wherein the control unit outputs a switching control signal controlling the first and second switching units; the control unit sends the alert signal to the examining unit.

The cited references on the 8982's fail to recite or disclosed above underlined claim.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prabodh M. Dharia whose telephone number is 571-272-7668. The examiner can normally be reached on M-F 8AM to 5PM.

11. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

12. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks

Washington, D.C. 20231

Prabodh Dharia

Partial Signatory Authority

AU2629

May 21, 2007



BIPIN SHALWALA
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600